

pany for the use of the customers' steam plant. Negotiations have been begun for the sale to Baltimore interests of approximately 25,000 horse-power at a profitable price, one condition of the agreement being the use of their steam plants in Baltimore; these steam plants are more than sufficient to supply the needs of your Company for steam auxiliary for its entire output. If a contract of this kind be made, there will then be no occasion for your Company to invest money in an auxiliary steam plant, and the amount so included in the original estimates of the cost of this project will be left for other use. There is practically no question that such an arrangement can be made on good terms, it being obvious that it is to the advantage of both interests to avoid the duplication of investment involved in the construction of a steam plant by your Company.

Our estimates of the total cost of the project, including all property, construction and equipment, right of way for pole lines to Philadelphia and to Baltimore, transmission lines and buildings all complete for delivery of power to Philadelphia or Baltimore, but excluding auxiliary steam plant in all cases, including interest during construction, are as follows:

Elevation 155 ft..	\$6,750,000
" 170 "	7,600,000
" 185 "	8,500,000

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The capacity of the power plant will be as follows:

Elevation 155 ft.	50,000 horse-power
" 170 "	60,000 " "
" 185 "	75,000 " "

And the investment per horse-power will be ---

Elevation 155 ft.	\$135
" 170 "	126
" 185 "	113

The surplus after charging off operating expenses, interest and sinking fund in bonds, will be ---

Elevation 155 ft.	\$418,000
" 170 "	485,000
" 185 "	820,000

The surplus per horse power will be ---

Elevation 155 ft.	\$ 8.33
" 170 "	8.10
" 185 "	10.90

Comparing elevations 155 and 185 feet, the additional 25,000 horse power is obtained for \$1,750,000, equal to \$70 per horse power, and the increased surplus after paying all charges is \$302,000.; that is, this additional investment earns 18 % plus interest and sinking fund,---a total of more than 25 %.

In view of these estimates, and the impossibility of later on developing the power that is lost by failure at this time to build the dam to the highest possible point, we recommend strongly that the dam be now built to a crest

elevation of 185.

For various reasons, there has been a delay of more than two months in beginning this work. Your financial arrangements have been made on the basis of a three-year period; if the time of the completion of work is prolonged beyond this three-year period, another year will be necessary for the completion of the work. The cost to your Company of this year for interest charges will be approximately, \$400,000; it is, in our opinion, urgent that this work should be undertaken at the earliest possible moment.

We believe that all conditions being considered, the lowest cost of work and the greatest expedition, can be attained by your Company doing the work itself, eliminating contractors entirely, but employing the best contracting firm that can be found, for a fixed fee, to do the work under its direction and at its cost. The employment of such a contracting firm is in lieu of getting together an organization by your Company. Several well-known contracting firms have been asked to name the fee for which they will do the work on this basis and have submitted bids. We strongly recommend your Board to do the work by this method, and in case of a decision so to do the work, we are prepared to submit to your Board the proposals that we have received.

The alternate method of doing the work, is to issue plans and specifications in sufficient detail to represent the work fairly and to get bids from responsible contractors



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for the work on the unit price basis. We have prepared such plans and specifications, and if so directed by you, can obtain bids within one month from date of issuance of specifications. This time is necessary to enable the contractors to examine the site of the proposed work and to collect the necessary local information.

We believe that this will be a more costly way to do the work, will take more time and that it has no advantage of any kind over doing the work by the Company directly, the sole apparent advantage of the contract method being the assumption that a contractor can be found of sufficient financial strength to stand back of his losses, if such there be. Experience, however, of other work of this character has proved that there is no such contractor and that the insurance feature of the contract is deceptive.



We therefore recommend to your Board,

1. That the dam be built at a crest elevation of 185 feet.

2. That the Company do this work itself, as in manner described above; that every effort be made to begin work by September first.

Messrs H. L. Cooper, F. O. Blackwell and Charles T. Main, the other members of your Advisory Board, all of whom have been consulted either personally or by letter, concur in these recommendations.

Very respectfully,

*Caryt Hutchinson*  
Chief Engineer.

*Wm. Barclay Parson*  
Consulting Engineer.

August 7, 1905.

Board of Advisory Engineers' Report, September 11, 1905

**McCALL FERRY POWER COMPANY,**  
 60 Wall Street, New York,  
 September 11, 1905.

*Report of Board of Advisory Engineers.*

H. F. DIMOCK, Esq., President.  
 McCall Ferry Power Company.

DEAR SIR.—Under the direction of your Executive Committee, your Chief Engineer issued specifications and a call for bids on August 11th, for the construction of a dam at elevation of 185 feet, and sub-structure of a power-house at McCall's Ferry. The invitation to bid was issued to the following:

Westinghouse, Church, Kerr and Co.  
 T. A. Gillespie Co.  
 J. Breuchaud.  
 Sanderson and Porter.  
 J. G. White and Co.  
 Arthur McMullen and Co.  
 MacArthur Bros. Co.  
 Atlantic, Gulf and Pacific Co.

On September 2nd the following bids, in strict accordance with the specifications, were received:

Arthur McMullen and Co. ....	\$2 538 700
Sanderson and Porter .....	2 950 200
J. G. White and Co. ....	3 134 300
MacArthur Bros. Co. ....	3 630 500
Atlantic, Gulf and Pacific Co.....	4 051 500

In addition to these bids, J. G. White and Co. made two

informal bids,—the first for \$2 500 900, based on one year's additional time to do the work, the second for \$2 377 600, on one year's additional time and requiring the Company to take over at the completion of the work a double track railroad from the dam site to Havre de Grace, that it proposes building for construction purposes, and to pay \$160 000 for it.

Westinghouse, Church, Kerr and Company, the T. A. Gillespie Company and Mr. Breuchaud declined to bid.

Your Board of Advisory Engineers has considered these bids, and begs leave to report as follows:

The bids are based on the supposition that the dam can be built at an elevation of 185 feet. This elevation was fixed by your Board on the assumption that a substantial agreement had been reached with the Pennsylvania Railroad Company regarding the removal of its tracks. Since then a difference in the views of the officers of the Railroad Company has developed, and possibly there will be a delay in reaching a satisfactory agreement. The correspondence with the Railroad Company, showing the status, is given further on. In our opinion it is, therefore, only fair that all these bids should be rejected and the deposits of \$10 000 be returned to each of the contractors, and we so recommend.

The regular bids requiring completion in two seasons, vary from a minimum of \$2 538 700 to a maximum of \$4 051 500. The details of these bids, together with the letters accompanying them, are attached to this report. The estimate prepared by the Chief Engineer, and approved by the Consulting Engineer of this Company, amounts to \$2 338 500.

A letter has been received from Mr. Breuchaud,—the contractor for the new Croton dam, one of the largest dams ever constructed,—in which he declines to bid, and states his reason. On account of the importance of this letter, we quote it in full:



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(Copy)

J. BREUCHAUD,  
Contractor,  
Mem. Am. Soc. C. E.  
Yonkers, N. Y.

Sept. 1, 1905.

CARY T. HUTCHINSON, Esq.,  
Consulting Electrical Engineer,  
60 Wall St., New York.

DEAR SIR.—I wish to thank you for remembering me among those whom you have asked to bid on the construction for the dam for the Susquehanna Water Power Co., near McCall's Ferry. I have given the project much thought, and find that the sum which I would name in my bid is so great that I have decided not to make a proposal. But I would like to say that I have visited the site of the dam, and my representative, Mr. B. Goldsborough, has spent four days there, studying local conditions. The plan which I feel is best suited to meet these and the one which I should adopt and which I feel sure would meet with your approval were I to do the work and assume the risks outlined in your proposed contract, would bring my bid if made to \$3 909 812. The possibility of an extraordinary flow of water during the first or second season, makes it necessary to add one year's penalty to the bid, which, with the possible loss of one set of coffer dams, accounts for this high figure. Under average conditions, as shown by the flow of the river during the last fourteen years, the same work could be done for \$2 321 000, and with favorable conditions, I think the cost might be reduced to about \$2 000 000.

If, after considering your bids, you should then have an inclination to do the work as outlined in your letter of June 28th, 1905, I would be pleased to confer with you.

My experience in constructing the new Croton Dam and other difficult work would be of great service in enabling me to handle the very difficult conditions which exist at McCall's Ferry, and the approaching completion of the new Croton Dam would enable me to make use of the organization which from years of service there has become so nearly perfect.

Yours very truly,

(Signed) J. BREUCHAUD.

By this letter you will see that after a careful examination both of the plans and of the site, Mr. Breuchaud believes that

the work might be done for \$2 000 000, or should be done for \$2 321 000,—practically the Engineers' estimate. On account of Mr. Breuchaud's experience, these figures are a gratifying confirmation of the estimate. Mr. Breuchaud goes on to state, however, that if he were to bid under the terms of the contract submitted to the bidders, in which he would have to guarantee all possible contingencies that might arise, his bid would amount to \$3 909 812. In other words, Mr. Breuchaud adds \$1 600 000 to what he considers a fair estimate solely for reasons of insurance, equal to the full amount of the total possible risk. The Atlantic, Gulf and Pacific Company has stated to your Chief Engineer that in making its bid, it has added \$550 000 to cover a possible penalty for one year's failure to complete the work, and \$250 000 to cover possible loss of plant,—a total of \$800 000 for insurance for these two items alone; the bid of this company differs from the bid that Mr. Breuchaud would have made by only \$200 000. Other bidders have made similar statements to your Engineers to the effect that they too have added to what they consider a fair cost, sums of large amount to cover all extraordinary contingencies. They have also stated, quite independently of Mr. Breuchaud, that they believed that this work should be completed for a sum between a minimum limit of \$2 000 000 and a maximum limit of \$2 500 000, practically the sum that has been estimated, so that the letter of Mr. Breuchaud may be taken as representing the views not only of himself but of the various bidders. There is also a very material sum included in these bids for contractor's plant adapted to the needs of the remainder of this work,—that is, to the buildings and equipment, so that the entire contractor's plant is, in the bids, charged against, say one-half of the work. In your Engineers' estimate the cost of plant was distributed over the whole work, dam, power house, machinery, etc.; some allowance should be made for this.

This work is one of uncertainty in its execution, and no contractor of means and repute will be willing to make a contract for a fixed sum unless he has included in such sum the maximum amount to cover all accidents and contingencies



that can possibly be imagined; in other words, under a contract this Company is compelled to pay for the sum total of all possible accidents, that is, it binds itself to pay the maximum cost under the worst conditions, whereas in all human probability such a succession of accidents and contingencies as are implied in this excessive sum will not occur; the Company, therefore, cannot possibly come out advantageously by such an arrangement, and gives up all chance of benefits that would accrue to it from the average conditions which have existed for the last fifteen years. Furthermore, it is almost certain that during the progress of the work, as experience is gained, means can be found for the better carrying on of the work, and improvements in methods not now foreseen will be effected. Under a fixed contract the benefit of all such improvements will go to the contractor; under the plan recommended by this Board, all such benefits will accrue to the Company; in order, therefore, to obtain insurance against a maximum total cost the Company would have to pay as much as 100 per cent. insurance premiums under the estimated bid of Breuchaud. Although these contractors are all reputable it must be borne clearly in mind that, in all similar work, when the contractor finds himself threatened with a heavy loss, he either stops work and gives the company an opportunity to bring suit to collect on his bond,—a long and tedious proceeding,—or, as is usually the case, he compromises; the loss is never borne by the contractor in full.

In our opinion, the advantages of the plan that we recommend are:

1. The possibility of the Company starting work promptly, and without the preparation of detailed plans.
2. The ability of the Company to change the plans and methods of work as the work progresses and as circumstances arise.
3. The fact that the Company will reap the benefit of all improvements in methods and alterations in the plans.



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4. The fact that there is no incentive to the contractor to slight the work.

Or, briefly, better results at less cost.

On the other hand, the only advantage claimed for the fixed sum plan is the assumed insurance against excessive cost.

In view of these bids and the letters and statements of the bidders, this Board strongly recommends to the Board of Directors the building of this dam and the dependent works by selecting some constructor of ability and experience, and paying him either a fixed bonus or a bonus plus a portion of such saving as he can effect below a previously agreed on maximum.

Very respectfully,

BOARD  
OF  
ADVISORY  
ENGINEERS

WM. BARCLAY PARSONS, Chairman.  
CARY T. HUTCHINSON,  
HUGH L. COOPER,  
F. O. BLACKWELL,  
CHAS. T. MAIN.

*Wm. Barclay Parsons, Chairman*  
*Cary T. Hutchinson*  
*Hugh L. Cooper*  
*F. O. Blackwell*

## Correspondence Re: Relocation of C. &amp; P. D. R. R.

November 1, 1905.

A. J. Cassatt, Esq.,

President of the Pennsylvania Railroad.

Broad Street Station, Philadelphia, Pa.

Dear Sir:-

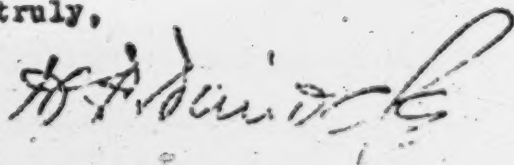
I am in receipt of yours of October 31st, giving me your ideas of what your railroad should receive in case you permitted it to be moved, as we requested. It is needless to say that I am very much disappointed, and if this really is your ultimate conclusion on the matter, we shall be obliged to build the lower dam, as we had first contemplated.

Our scheme was financed on the theory that we should build the lower dam. Then subsequently we saw an opportunity to build a higher dam, if your railroad was moved, we, of course, found that the cost of the dam itself would be very much increased, but when we received the estimates of your chief engineer, as to what your present railroad could be compensated for in the new place, we made up our mind that we should still have money enough to build the increased dam, and pay the amount he indicated as the cost. Your present idea would add so much to that sum that we could not bring it within our means, and there is no way that we could raise enough money, even if we thought it was well to do so to enable us to accomplish this. If you stand, therefore, inflexibly on that point, it would be beyond our power, and we shall be obliged to proceed upon our original plans.

I will have the matter carefully gone over, and see if

there is any possible opportunity for us to advance anything within our means. We had supposed that the advantage to the Pennsylvania Railroad of having the same kind of a railroad as it now has in a place so much better than it is now, would make it very desirable for your railroad to have it done, and we have understood that that was the opinion of all connected with your railroad until we received your own ideas on the subject.

Yours very truly,

A handwritten signature in dark ink, appearing to read "H. A. Smith", with a large, sweeping flourish extending from the end of the name.



McC. F. P. Co.  
No. 7

# *The Pennsylvania Railroad Company*

*Office of the President*

*Philadelphia,*

December 6th, 1905.

*General Office  
Broad Street Station*

Mr. Hugh L. Cooper,  
Manager of Construction,  
McCall Ferry Power Company,  
60 Wall St. New York.

Dear Sir:

Your telegram of to-day is at hand. I did not understand that you were waiting for us to submit a proposition.

When you were here last I proposed that your Company should build the new line between Shenk's Ferry and Fishing Creek, connecting with the old road with a 0.3 grade; the graduation and masonry to be for double-track, but a single track only to be laid by you. I further offered to refund to you a part of the increased cost that you would incur for the graduation and masonry for the second track whenever we made use of it by laying track upon it. I now have to propose that the sum we pay you in accordance with the above be \$200,000.

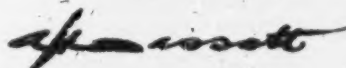
We are willing to make the same arrangement with reference to your development at Conowingo, you to do the grading and masonry on the new line for a double track and lay one track on it, we to pay you \$175,000. when we make use of the second track grading by laying a track on it.

Mr. Brown estimates the cost of the new line, with grading and masonry for double-track, between Shenk's Ferry and Fishing Creek;

Page 2.

with one track laid on it at \$1,437,520.00, and of the line between Fishing Creek and Canal Station, also with grading and masonry for double-track and with a single track laid on it, at \$2,127,500.00. You understand, of course, that these are simply estimates of cost, and we expect you to do the work whatever it costs and to obtain the right-of-way at your expense.

Yours truly,



President.

[X]

[X]

[X]

[G]

[O]

[X]

## Contract With Cooper for Hydraulic Construction

THIS AGREEMENT made and entered into this 18th day of October, 1905, by and between McCALL FERRY POWER COMPANY, herein called the "COMPANY", a corporation organized under the laws of the State of Pennsylvania, and having its principal office at 60 Wall Street, New York City, and HUGH L. COOPER, herein called "COOPER", a Consulting Engineer, with business offices at 60 Wall Street, New York City, WITNESSETH:

WHEREAS the Company is about to construct a dam and power-house on the Susquehanna River near McCall's Ferry, in the State of Pennsylvania, with complete hydraulic and electric equipment and transmission lines to such points as it may select, and wishes to retain the services of Cooper in this work,

NOW, THEREFORE, in consideration of the payments and agreements hereunder, it is mutually agreed:

1. The Company agrees to employ and hereby does employ Cooper as "Hydraulic Engineer" and "Manager of Construction", of the works at McCall's Ferry, and Cooper agrees to serve in this capacity under the Company and its officers, for the term of this agreement.

2. Cooper's duties under this agreement shall include the preparation of plans and specifications for the works and for the method to be followed in the construction of the works, all of which plans and specifications shall be subject to the approval of the Chief Engineer of the Company. His duties shall also include the superintendence of the building of the dam, power-house and other buildings, embankment walls, protecting walls, the railroad changes, and all work at or near McCall's Ferry incidental to the development of a complete hydro-electric plant, including the entire hydraulic equipment of the plant; but Cooper's duties shall not include the design or superintendence of the electrical equipment of the plant, of the transmission lines, or of the sub-stations.



3. The term of this agreement shall be until the entire construction of the dam, buildings and all hydraulic works of the plant is completed, and ready for permanent operation.

4. Cooper agrees also to supply to the Company such part of the organization now working at Niagara Falls for the Electrical Development Company as may be sufficient to carry on the work at McCall's Ferry at the rate contemplated under this agreement; and if this organization is not sufficient, as determined by the Chief Engineer, Cooper agrees to supplement it by the best available men. All such persons shall be paid by the Company, except Value.

5. Cooper agrees also to supply the services of Beverly R. Value, now at Niagara Falls, as "Engineer in Charge" of the work at McCall's Ferry, and agrees for Value that his services shall be continuous, and that his entire time shall be given to this work. In case of incapacity, sickness or death of Value, Cooper will then supply a substitute for Value who shall be satisfactory to the Company; Cooper agrees to pay the salary of Value, or of his substitute. The term of Value's services shall be continuous with Cooper's.

6. It is agreed that Cooper shall not be called upon to give his entire time to this work, but that he shall give as much time as is necessary, in the opinion of the Chief Engineer, for the completion of the work at the earliest possible date, and that he will undertake no other work which will conflict in any way with the prompt and economical execution of this work.

7. Cooper shall select and be responsible for all employees under him on the work at McCall's Ferry; and shall make all purchases of materials.

The Company may, however, require the dismissal of any employee or employees selected by Cooper, but the Company may not demand that Cooper shall employ any special person or persons. The salaries and rate of wages agreed to be paid by Cooper, all

obligations incurred for the account of the Company, all contracts made by Cooper for materials and for labor shall be subject to the approval of the Chief Engineer, whose decision shall be final.

8. It is understood between Cooper and the Company that the Company cannot now decide the elevation of the crest of the dam, which may be from 170 to 185 feet above sea level, called herein "approximately 180 feet", or 155 to 170 feet above sea level, called herein "approximately 155 feet."

9. In case the dam is built to an elevation of approximately 180 feet above sea level, the Company agrees to pay Cooper in full for the services of himself and Value, under this agreement, the sum of One Hundred and Twenty-five Thousand Dollars (\$125,000), to be paid in twenty-five monthly installments of Five Thousand Dollars (\$5000) each, the first payment to be made the first day of November, 1905; and the Company further agrees to pay Cooper, in case the work hereunder shall be so far completed as is defined in Clause 11, on or before the first of January, 1908, the additional sum of Fifty Thousand Dollars (\$50,000); this sum to be paid in monthly installments of Five Thousand Dollars (\$5000) each, until the remainder of the work to be done, up to and including the setting of the wheels, which terminates Cooper's term of service, shall have been finished, or until the entire amount shall have been paid; but nothing herein shall be held to release Cooper from his obligations under this agreement to complete all the works up to and including the setting of the wheels. The Company further agrees that if the failure to so far complete the work as is defined in Clause 11, on or before the first of January, 1908, shall be due to the act or omission of the Company, then the Company will continue to pay Cooper at the rate of Five Thousand Dollars (\$5000) per month until the Fifty Thousand Dollars (\$50,000) additional shall have been paid him, - after which no additional sums shall be paid, - or until Cooper's term of service shall have expired, when the balance, if any, of

the Fifty Thousand Dollars (\$50,000) shall be paid to him.

10. In case the dam is built to an elevation of approximately 185 feet, it is mutually agreed that in Clause Nine, One Hundred Thousand Dollars (\$100,000) shall be substituted for One Hundred and Twenty-five Thousand Dollars (\$125,000), Four Thousand Dollars (\$4000) for Five Thousand Dollars (\$5000), and Thirty Thousand Dollars (\$30,000) for Fifty Thousand Dollars (\$50,000), and that all other provisions of Clause Nine shall be unchanged.

11. The work shall be deemed to be "completed" as far as earning the bonus of Fifty Thousand Dollars (\$50,000) or Thirty Thousand Dollars (\$30,000) is concerned, when the dam is finished to the crest line, the power-house substructure completed, all walls, embankments and incidental work completed, so that the dam and power-house are in such condition that a flood giving ten (10) feet of water on the crest of the dam shall cause no damage to any of the structures. The determination of this fact shall be made by the Chief Engineer, whose decision shall be final.

12. It is mutually agreed that the sums of One Hundred and Twenty-five Thousand Dollars (\$125,000) or One Hundred Thousand Dollars (\$100,000) to be paid Cooper shall be net payments to him, and that all expenses incurred by Cooper in the design or execution of this work, such as expenses of office force, draughtsmen, traveling expenses of himself and assistants, (but excepting Value's salary), shall be for the account of and payable by the Company.

IN WITNESS WHEREOF to this agreement executed in duplicate the said HUGH L. COOPER has set his hand and seal, and the said McCALL FERRY POWER COMPANY the signature of its President, and its seal, the day and year first above written.

*McCall Ferry Power Co.  
By J. F. Demock, Pres.  
Hugh L. Cooper*



## McCALL FERRY POWER COMPANY

OFFICE OF THE CHIEF ENGINEER  
ROOM 2407, SIXTY WALL STREET  
NEW YORK CITY

CARY T. HUTCHINSON,  
CHIEF ENGINEER.

BOYD EHLE,  
RESIDENT ENGINEER.

R. H. ANDERSON,  
ASSISTANT ENGINEER.

WM. BARCLAY PARSONS,  
CONSULTING ENGINEER.

June 20, 1906.

Wm. H. Barnum, Esq., Treasurer,

McCall Ferry Power Co.,

62 Cedar St., New York City.

Dear Sir:-

The Executive Committee of this Company yesterday decided that the dam should be built to elevation 165, thus bringing it within the height called "approximately 155 feet" in Mr. Cooper's contract. You will therefore see that under these circumstances, Mr. Cooper's monthly compensation should be changed from \$5000 to \$4000, and should be continued until he has been paid a total of \$100 000, and that \$30 000 additional should be paid him after January 1st, 1908, in case he shall have complied with the completion clause in the contract. As you have been paying Mr. Cooper at the rate of \$5000 a month for some time, the total of \$100 000 will have been paid before January 1st, 1908, and I assume these payments to him should then cease until January 1st, 1908, and the additional payments provided for in the agreement should again begin. On this matter I would suggest that you get the opinion of Mr. Bartlett.

Yours very truly,

*Cary T. Hutchinson*  
Chief Engineer.



## Contract With Sanderson & Porter for Electrical Construction

THIS AGREEMENT, made and entered into this 25th day of October, 1905, by and between McCALL FERRY POWER COMPANY, herein called the "COMPANY", a corporation organized under the laws of the State of Pennsylvania, and having its principal office at 60 Wall Street, New York City, and SANDERSON AND PORTER, herein called the "FIRM", a partnership doing business as Engineers and Contractors, with offices at 52 William Street, New York City, WITNESSETH:

WHEREAS the Company is about to construct a dam and power-house on the Susquehanna River near McCall's Ferry, in the State of Pennsylvania, with complete hydraulic and electric equipment, and transmission lines to such points as it may select, and wishes to retain the services of the Firm in this work,

NOW, THEREFORE, in consideration of the payments and agreements hereunder, it is mutually agreed

1. That the Company hereby employs the Firm as Superintendent of Electrical Construction of its works, and that the Firm will serve in this capacity under the Company and its officers for the term of this agreement:

2. That the term of this agreement shall be until the installation of all the electrical equipment, including transmission lines and sub-stations, is complete and ready for permanent operation, - except that in no case shall the term of this agreement be for a longer period than until January first, 1909:

3. That all work the Firm shall do and all duties that are assigned to it under this agreement, shall be subject to the approval of the Chief Engineer of the Company, and shall be executed under his direction, and that his decision shall be final in all questions arising under this agreement:

4. That the Firm's duties under this agreement shall, in general, include the preparation of plans and specifications for the work; the purchase of materials and machinery, apparatus and equipment; the employment of labor; the testing, either at the factories or on the ground, of all machinery and apparatus; the installation

of machinery and apparatus; the keeping of a complete set of books and vouchers covering its disbursements; the examination, audit and approval of bills and accounts for labor, materials and equipment, and the preparation of drafts for their payment. Furthermore, the Firm will, when requested, give the Company the benefit of its skill and experience relating to the policy and operation of this plant, and, in general, will use its best efforts to further the interests of the work. The scope of its duties shall begin with the electric generators, and shall include the switchboard, transformers and all appurtenances; the transmission lines, including poles and substations, and all incidental equipment; and in addition, the superintendence of such related work as may be requested by the Chief Engineer. The duties of the Firm shall not at any point touch upon the hydraulic equipment of the plant:

5. That the Firm will supply to the Company the services of such part of its organization as may be necessary and sufficient for the carrying on of this work at the rate of progress contemplated:

6. That the Firm shall not be called upon to give its entire time to this work, but that it shall give as much time as is necessary, in the opinion of the Chief Engineer, to ensure the completion of the work in due season, and that it will undertake no other work which will conflict with the satisfactory discharge of its duties hereunder:

7. That in consideration of the services to be rendered by the Firm, the Company will pay to the Firm the sum of Fifty Thousand Dollars (\$50,000) in thirty-eight equal monthly installments, the first installment to be paid November first, 1905; but in case the work is completed before January first, 1909, the Company will pay the Firm upon the completion of the work, whatever balance may be due to it.

8. That the Company will pay all the expenses in connection with the work done by the Firm under this agreement, it being the intent that the fee paid the Firm shall be subject to no deductions for expenses; but the Company will not pay any part of the general office expenses of the Firm in New York, as, for instance, such items as office rent, local telephone service, and general expenses of office operation; but the Company will reimburse the Firm for all disbursements for engineers, draftsmen, clerical force and other employees employed directly on work for the Company.

IN WITNESS WHEREOF to this agreement executed in duplicate, the said SANDERSON AND PORTER has set its hand and seal, and the said McCALL FERRY POWER COMPANY the signature of its President and its seal, the day and year first above written.

*McCall. Ferry Power Co*  
*By H. F. Dinwiddie Pres*

*Sanderson & Porter*



## Hutchinson's &amp; Parsons' Estimates of Costs, June 19, 1906

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## McCALL FERRY POWER COMPANY

OFFICE OF THE CHIEF ENGINEER  
ROOM 2407, SIXTY WALL STREET  
NEW YORK CITY

CARY T. HUTCHINSON,  
CHIEF ENGINEER.

BOYD EHLE,  
RESIDENT ENGINEER.

R. H. ANDERSON,  
ASSISTANT ENGINEER.

WM. BARCLAY PARSONS,  
CONSULTING ENGINEER.

June 19, 1906 .

Henry F. Dimock, Esq., President,

McCall Ferry Power Company.

Dear Sir:-

I wish to call your attention to the following comparison of the various estimates that have been made for the development of the McCall Ferry property.

The comparison is made between (1) the original estimate of the underwriting papers, (2) the estimate of December 18, 1905, for the 185 foot dam, and (3) Mr. Cooper's recent estimate for the 165 foot dam at McCall Ferry. The costs per horse-power are respectively \$119, \$117 and \$125.

These estimates are as follows:-

<u>Comparison of Estimates of McCall Ferry Development</u>			
	<u>Power Delivered</u>	<u>Total Cost</u>	<u>Cost per Horse-power.</u>
(1) <u>Original Estimate:</u>			
	50 000 h.p.	\$5 491 000	\$110
Add for Peach Bottom Purchase		450 000	
		\$5 941 000	\$119
(2) <u>Estimate of December 18, 1905:</u>			
	50 000 h.p.	\$8 265 000	\$165
Add for	25 000 h.p.	500 000	
Making for	75 000 h.p.	\$8 765 000	\$117
(3) <u>Cooper's Estimate of June 18, 1906:</u>			
	50 000 h.p.	\$8 859 000	\$177
Add for	25 000 h.p.	533 000	
Making for	75 000 h.p.	\$9 392 000	\$125

-2-

H. F. D.:—

That is to say, in spite of the very great increases in the cost of railroad elevation, of property, and sundry expenses, the present estimate, using Mr. Cooper's figures as a basis (which are unquestionably maximum figures), shows substantially the same cost per horse-power as did the original estimate; the proposition is, however, now based on 75 000 horse-power, whereas it was originally based on 50 000 horse-power, - thus insuring materially greater net earnings.

The conclusion to be drawn from this is that the merits of the original proposition were much understated, and that under existing conditions the proposition is better than at the outset.

Yours very truly,

*Cay J. Hutchinson*  
Chief Engineer.

## McCALL FERRY POWER COMPANY

CARY T. HUTCHINSON,  
CHIEF ENGINEER.BOYE EHLE,  
RESIDENT ENGINEER.R. H. ANDERSON,  
ASSISTANT ENGINEER.WM. BARCLAY PARSONS,  
CONSULTING ENGINEER.OFFICE OF THE CHIEF ENGINEER  
ROOM 2407, SIXTY WALL STREET  
NEW YORK CITY

June 19, 1906.

H. F. Dimock, Esq.,  
President, McCall Ferry Power Company,  
60 Wall St., New York City.

My dear Sir:-

In accordance with your request, I asked Mr. Hugh L. Cooper, Manager and Engineer of Hydraulic Construction, to furnish me with his estimate of the construction of dams with a crest elevation of 165 feet and 185 feet, or at such other height as in his judgment would not require the purchase of additional land. In transmitting this request to Mr. Cooper, I told him that he was at entire liberty to make any suggestions that he might wish.

Mr. Cooper has submitted six different projects. These projects cover three plans for dams at McCall Ferry and three at Cully's Falls. Of the dams at McCall Ferry one would have a crest elevation of 185 feet and would be designed to deliver 90 000 kilowatts at Baltimore; the other two would have an elevation of 165 feet, with a capacity to deliver 45 000 kilowatts and 65 000 kilowatts in Baltimore. The Cully's Falls dams would all have a crest elevation of 165 feet, one to deliver 45 000 kilowatts in Baltimore, another to deliver 45 000 kilowatts, with foundations for machinery for generating 45 000 kilowatts more, and one to deliver 90 000 kilowatts.

As you will see by these figures, Mr. Cooper estimates that the fall of the river is sufficient to economically install a larger amount of electric power than the Chief Engineer had previously, but more conservatively, estimated. The details of Mr. Cooper's plans and estimates are summarized as follows:



No.	Location	Crest Elev.	No. Units in Generating Station	Kilowatts Delivered in Balto.	Estimate of Cost	Cost per kw. Delivered
1	McCall Ferry	165'	13	65 000	\$10 447 400	\$160.76
2	"	"	9	45 000	9 132 200	202.93
3	"	185	12	90 000	12 476 000	138.60
4	Cully's Falls	165	6	45 000	9 106 600	202.35
5	"	"	12	90 000	11 240 000	124.90
6	"	"	6 *	45 000	9 384 000	208.60

\* (Plus foundations for six additional)

Mr. Cooper's estimates are considerably higher than the estimates heretofore considered by the Board. This, in the case of the dam at elevation 185 feet at McCall Ferry, is due largely to the fact that Mr. Cooper has added \$990 000 to the amount of property to be acquired. He has also increased the construction estimates above what he had previously submitted or what had been considered by the Board. His reasons for increasing the construction estimates, which in the case of the dam at elevation 185 feet amounted to \$750 000, are to allow a very generous, an apparently unnecessarily generous, amount for contingencies, to cover the increased expenditure for tools, which his plan has shown to be necessary, and a rise in the price of cement, against which he had not taken options.

After a general discussion between the Chief Engineer, Mr. Blackwell and Mr. Cooper, it would seem that the most economical development at the McCall Ferry site would be a total output of 75 000 horse-power, of which approximately 50 000 horse-power would be installed immediately, generated by seven units, and 25 000 horse-power postponed until the future, to be generated by three additional units,

the foundations of which, however, would be put in at the outset.

Mr. Cooper was then requested to submit estimates on the McCall Ferry and Cully's Falls sites, for plants of the same capacity, and with dams built to an elevation of 165 feet; these estimates are as follows:

McCall Ferry.

Hydraulic Installation - - - - -	\$3 439 000
Electrical Installation - - - - -	1 305 000
Engineering - - - - -	300 000
Fixed Charges - - - - -	3 140 000
Loss of Interest during Construction - - -	<u>675 000</u>
	\$8 859 000

Cully's Falls.

Hydraulic Installation - - - - -	\$3 453 000
Electrical Installation - - - - -	1 247 000
Engineering - - - - -	300 000
Fixed Charges - - - - -	3 180 000
Loss of Interest during Construction - - -	<u>750 000</u>
	\$8 930 000

In the making of these estimates, Mr. Cooper has used plans with somewhat larger sections than those heretofore considered by the Board of Engineers, giving a dam of much greater weight, in order to provide an additional margin of safety, and foundations for a power-house on a somewhat larger scale in order to carry the greater power. For the moment it would seem wise to accept Mr. Cooper's enlarged sections, for if there is any error, it is an error on the safe side. The details of Mr. Cooper's estimates have been gone over very thoroughly, and it would seem that he has included an exceedingly liberal margin for all possible contingencies. The Board may accept, therefore, Mr. Cooper's total estimate as the maximum cost of a

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dam at elevation 165 feet at McCall Ferry. In this estimate Mr. Cooper has increased the previous estimate for right of way for the transmission line to Havre de Grace and Baltimore from \$65 000 to \$185 000, and the right of way for the Pennsylvania Railroad diversion from \$100 000 to \$180 000,- an increase of \$80 000; and an arbitrary increase of \$100 000 for other unknown damages, a total increase in the real estate of \$295 000. I personally have no means of knowing the correctness of these real estate estimates.

In regard to the increase of \$100 000 for additional lands I beg leave to refer to a letter of the Chief Engineer, attached hereto, in which he states that there is no further land to be acquired above the dam or damages to pay, provided the dam is built not to exceed elevation 165.

It is impossible to say at just what cost Mr. Cooper can complete this dam. It may be stated, however, that unless some extraordinary contingency occurs, the actual cost should be considerably below Mr. Cooper's estimate,- possibly as much as \$500 000.

Mr. Cooper makes the recommendation that the work be suspended at McCall Ferry, and that a dam be built at Cully's Falls about one mile further down the river, at crest elevation 165 feet, with machinery installed to deliver 45 000 kilowatts at Baltimore and with foundations for machinery having a capacity of 45 000 kilowatts more; in other words, plan number six in the table first above.

As this involves a complete change in plans, the opening of a number of new uncertainties, and the probable delay in the completion of the work for at least one year, it is my opinion that the work should be carried out ~~as heretofore~~ planned, at the McCall Ferry site, and that the dam should be built at an elevation of 165



feet, unless the Board should see its way clear to carry out a scheme at a greater elevation to make a more economical installation.

Very truly yours,

*Wm. Barclay Parsons*  
Consulting Engineer.

In view of the existing circumstances, we concur in the recommendation to build the dam at the McCall Ferry site, at elevation 165 feet, and we believe that the cost will be within the amount fixed by Mr. Cooper.

*Wm. Hutchinson*  
Chief Engineer.

*J. O. B. Powell*  
*J. W. C.*

Agreement With P. R. R. Co. for Relocation of  
C. & P. D. R. R.

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# AGREEMENT

BETWEEN

COLUMBIA AND PORT DEPOSIT RAILWAY  
COMPANY,

PHILADELPHIA, BALTIMORE AND WASHING-  
TON RAILROAD COMPANY,

AND

McCALL FERRY POWER COMPANY.

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DATED 13th AUGUST, 1906.

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REGARDING THE RECONSTRUCTION OF THE COLUMBIA AND PORT  
DEPOSIT RAILWAY BETWEEN SAFE HARBOR AND  
A POINT 500 FEET SOUTH OF BENTON  
STATION, PENNSYLVANIA.

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**THIS AGREEMENT** made and entered into this thirteenth day of August, 1906, between the **Columbia and Port Deposit Railway Company**, a corporation of the States of Pennsylvania and Maryland, and the **Philadelphia, Baltimore and Washington Railroad Company**, a corporation of the States of Pennsylvania, Delaware and Maryland, operating as Agent the railway of the said Columbia and Port Deposit Railway Company, parties of the first part, hereinafter called "Railway Companies," and the **McCall Ferry Power Company**, a corporation of the State of Pennsylvania, party of the second part, hereinafter called "Power Company."

Whereas by agreement dated July 2nd, 1906, between the Railway Companies and the Power Company, a copy whereof is hereto annexed, the Columbia and Port Deposit Railway Company agreed, *inter alia*, to construct its relocated roadbed, tracks and appurtenances between Safe Harbor and a point 500 feet south of Benton Station, Lancaster County, Pennsylvania, in accordance with the terms and conditions in the said agreement fully set forth, the Power Company therein agreeing, *inter alia*, to pay the cost of grading said relocated roadbed and constructing the masonry for a double track railway between Safe Harbor and a point 500 feet south of Benton Station, and the cost of laying upon such grading and masonry a single track railway in accordance with plans and specifications to be prescribed by the Railway Companies, and also the cost of erecting telegraph lines, stations and other facilities and appurtenances of the same general



character and to take the place of those now used in connection with the present railway line, all of the said work to be performed under authority to be conferred by the Columbia and Port Deposit Railway Company and the said construction payments to be made monthly by the Power Company on demand of the Columbia and Port Deposit Railway Company.

**And Whereas** the Power Company now desires to undertake the said work of constructing its dam at or near McCall's Ferry, Lancaster County, Pennsylvania, and in connection therewith and to facilitate the said work and avoid unnecessary expense and delay it is essential that the work of constructing the said roadbed, tracks, telegraph lines, stations and other facilities and appurtenances should forthwith be undertaken.

**Now, Therefore, This Agreement Witnesseth,** that in consideration of the premises and of the covenants and undertakings herein expressed to be observed, kept and performed, as well as of the sum of one dollar by each party to the other in hand paid before the sealing and delivery hereof, the receipt whereof is hereby acknowledged, each of the parties hereto for themselves, their successors and assigns, mutually covenant, stipulate and agree as follows:—

**First:—**That the Columbia and Port Deposit Railway Company hereby authorizes the Power Company, acting as its agent and for and on its behalf, to cause the said relocated roadbed, tracks, telegraph lines, stations and other facilities and appurtenances between Safe Harbor and a point 500 feet south of Benton Station to be constructed in accordance with plans and specifications prescribed and approved by the Chief Engineer of the Railway Companies, and to cause the said work to be prosecuted and completed without delay under the supervision and

to the satisfaction of the Chief Engineer of the Railway Companies, or his representative, and paid for in accordance with the covenants and undertakings contained in the said agreement of July 2nd, 1906.

**Second:**—The Power Company hereby agrees, acting for and on behalf of and under authority hereby conferred by the Railway Companies, to cause the work of constructing the said relocated roadbed, tracks, telegraph lines, stations and other facilities and appurtenances to be prosecuted and completed without delay in accordance with plans and specifications prescribed and approved by the Chief Engineer of the Railway Companies and under his supervision and to the satisfaction of the said Chief Engineer, or his representative, and to make all payments therefor in accordance with the terms and conditions of the said agreement of July 2nd, 1906; and report to the Columbia and Port Deposit Railway Company, within twenty days after the end of each month, the payments made to the Contractor for the work performed during the preceding month; and that the said relocated roadbed, tracks, telegraph lines, stations and other facilities and appurtenances shall be delivered to the Columbia and Port Deposit Railway Company free and clear of any liens, claims or demands whatsoever for materials furnished and provided and work and labor done and performed upon or in connection with the said work.

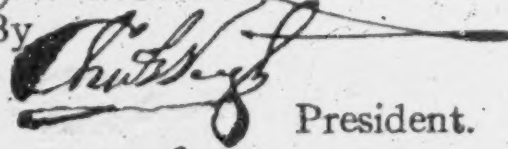
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In Witness Whereof the said parties hereto have caused their respective corporate seals to be hereunto affixed, duly attested, the day and year first hereinbefore written.

Signed, sealed and delivered in the presence of us:

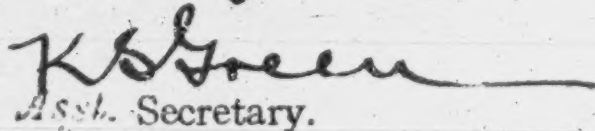
COLUMBIA AND PORT DEPOSIT  
RAILWAY COMPANY.

By



President.

Attest:



Asst. Secretary.

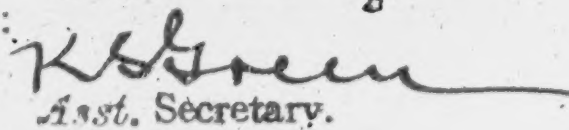
PHILADELPHIA, BALTIMORE AND  
WASHINGTON RAILROAD COM-  
PANY,

By



Second Vice-President.

Attest:



Asst. Secretary.

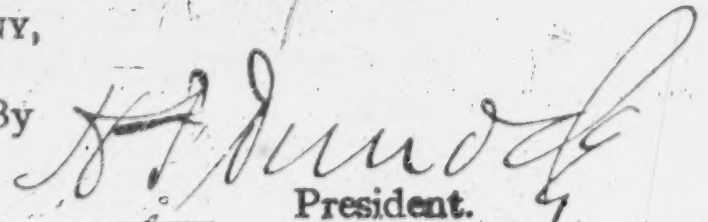
Witness as to

H. F. Dunroch  
and

Harold Pender

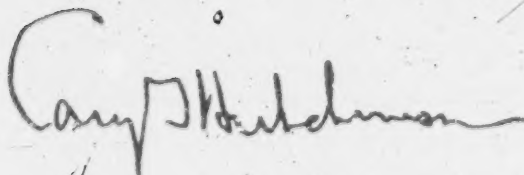
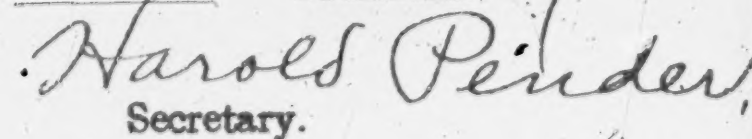
MC CALL FERRY POWER COM  
PANY,

By



President.

Attest:

Secretary.



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# AGREEMENT

BETWEEN

COLUMBIA AND PORT DEPOSIT RAILWAY  
COMPANY,

PHILADELPHIA, BALTIMORE AND WASHING-  
TON RAILROAD COMPANY,

AND

McCALL FERRY POWER COMPANY.

DATED 2ND JULY, 1906.

REGARDING THE CONSTRUCTION OF DAMS ACROSS THE SUSQUEHANNA  
RIVER AT McCALL'S FERRY AND CONOWINGO, AND THE RELO-  
CATION AND IMPROVEMENT OF THE COLUMBIA AND  
PORT DEPOSIT RAILWAY BETWEEN SAFE HARBOR,  
PENNSYLVANIA, AND ROCK RUN, MARYLAND.

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**THIS AGREEMENT** made and entered into this second day of July, 1906, between the **Columbia and Port Deposit Railway Company**, a corporation of the States of Pennsylvania and Maryland, and the **Philadelphia, Baltimore and Washington Railroad Company**, a corporation of the States of Pennsylvania, Delaware and Maryland, operating as Agent the railway of the said Columbia and Port Deposit Railway Company, parties of the first part, hereinafter called "Railway Companies," and the **McCall Ferry Power Company**, a corporation of the State of Pennsylvania, party of the second part, hereinafter called "Power Company."

**Whereas** the Railway Companies and the Power Company entered into an agreement dated 16th, February, 1906, regarding the construction of dams across the Susquehanna River, at McCall's Ferry and Conowingo, and the relocation and improvement of a portion of the Columbia and Port Deposit Railway.

**And Whereas** certain changes in the plans of the Power Company now make it desirable that the said agreement be cancelled, and the following agreement executed in lieu thereof.

**And Whereas** in the opinion of the Columbia and Port Deposit Railway Company the relocation and improvement of portions of its railway is desirable to further and better secure the safety of persons and property and facilitate the transportation of traffic thereon and avoid the interruption thereof by reason of ice and floods in the Susquehanna River, and it is intended to undertake such work from time to time in the future;

**And Whereas** the Power Company proposes to construct a dam across the Susquehanna River at or near McCall's Ferry, Lancaster County, Pennsylvania, and

contemplates the construction of another dam at or near Conowingo, Cecil County, Maryland, either of which would prevent the operation of the Columbia and Port Deposit Railway on its present location, and has requested the Columbia and Port Deposit Railway Company to immediately proceed with the relocation and construction of that portion of its railway and appurtenances as hereinafter set forth, and in consideration of its so doing has agreed to pay the entire cost thereof,

**Now, Therefore, This Agreement Witnesseth** that in consideration of the premises and of the covenants and undertakings herein expressed to be observed, kept and performed, as well as of the sum of one dollar by each party to the other in hand paid before the sealing and delivery hereof, the receipt whereof is hereby acknowledged, each of the parties hereto for themselves, their successors and assigns, mutually covenant, stipulate and agree as follows:—

**First:**—The Power Company hereby agrees to promptly proceed with the construction of a dam in the Susquehanna River at or near McCall's Ferry, Lancaster County, Pennsylvania.

**Second:**—The Columbia and Port Deposit Railway Company, in order to provide for the relocation, widening and improvement of said railway, as hereinafter set forth, has adopted a revised location for that portion thereof between Safe Harbor and Peach Bottom, Lancaster County, Pennsylvania, a distance of fifteen and five-tenths miles, and hereby agrees to also adopt a revised location for that portion between a point about eight hundred and fifty feet south of Fishing Creek Station, Lancaster County, Pennsylvania, and a point at or near Rock Run, Cecil County, Maryland, a distance of about fifteen miles, indicated on the plan hereto attached marked "Exhibit A, July 2nd, 1906," which revised locations will require the construction of a new roadbed and



track at a higher level, and on a wider roadbed, than the present railway, between Safe Harbor and Rock Run; and the Railway Companies hereby agree to take all other corporate action necessary to authorize the construction of such relocated roadbed, tracks and appurtenances as herein fully set forth.

**Third:**—The Columbia and Port Deposit Railway Company hereby agrees to acquire, as hereinafter provided, the right of way for and construct such relocated roadbed, track and appurtenances between Safe Harbor and a point 350 feet south of Peach Bottom Station, Lancaster County, Pennsylvania, and, in case the Power Company shall hereafter determine to build the Conowingo dam, the Columbia and Port Deposit Railway Company agrees to acquire, as hereinafter provided, the right of way and construct such relocated roadbed, track and appurtenances between a point about 850 feet south of Fishing Creek Station, Lancaster County, Pennsylvania, and Rock Run Station, Cecil County, Maryland, the said relocated roadbed, track and appurtenances to be constructed upon such alignment and with such grades and in accordance with such plans and specifications as the Railway Companies may prescribe, and subject to the approval of their Chief Engineer, or his representative, it being hereby understood and agreed that the alignment shall not be less favorable, nor shall it be required to be more favorable, than that of the present roadbed and track of the said railway between the said points, but that there shall be no grades opposed to the eastbound traffic and that the grades opposed to the westbound traffic shall not be more than 0.3% equated for curvature, excepting that until the work of constructing the Conowingo dam is undertaken the grade against the westbound traffic may be 0.5% between a point 850 feet south of Fishing Creek Station and a point 500 feet south of Benton Station. If the building of the said Conowingo dam is not undertaken before January 31st, 1913, all the rights and privileges conferred by this agree-

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ment in regard to the Conowingo dam shall then cease and terminate, and the Power Company hereby agrees to then immediately pay the Columbia and Port Deposit Railway Company the amount required by it to reduce the said grade of 0.5% to a grade of 0.3% equated, which will necessitate the construction of the said relocated roadbed and track from a point 850 feet south of Fishing Creek Station to a connection with the present roadbed at a point 350 feet south of Peach Bottom Station, Lancaster County, Pennsylvania.

The Power Company further agrees that if the Columbia and Port Deposit Railway Company shall, before January 31st, 1913, reduce the grades upon the parts of the said railway above Safe Harbor and below a point 350 feet south of Peach Bottom Station to a maximum grade of 0.3% equated for curvature the Power Company will pay the entire expense of maintaining and operating an extra engine and crew to aid in the movement of trains over the said 0.5% grade if, in the opinion of the Railway Companies, such engine shall be necessary, until the said 0.5% grade shall be reduced to 0.3% as hereinbefore provided.

The Power Company further agrees that, upon the request of the Railway Companies, it will furnish and cause to be conveyed free of cost to the said Columbia and Port Deposit Railway Company, the right of way for such relocated roadbed, track and appurtenances between Safe Harbor and Rock Run, so far as it now owns the real estate necessary therefor, as soon as the same shall be required by the Columbia and Port Deposit Railway Company pursuant to the provisions hereof.

The Columbia and Port Deposit Railway Company agrees, as soon as the same shall be required pursuant to the provisions hereof, to obtain by purchase so much of the remainder of such right of way as it shall be able to so obtain on terms and at prices to be approved by the Power Company, and further agrees to cause to be instituted and carried on with due diligence legal pro-

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ceedings to obtain the remainder, if any, of such right of way by condemnation; and the Power Company agrees to pay from time to time, as the same shall be incurred, and on demand of the Columbia and Port Deposit Railway Company, the whole cost and expense of so obtaining such remainder of such right of way, either by purchase or condemnation.

**Fourth:**—The Power Company also hereby agrees to pay the cost of grading said relocated roadbed and constructing the masonry for a double track railway between Safe Harbor and Rock Run, and the cost of laying upon such grading and masonry a single track railway in accordance with plans and specifications to be prescribed by the Railway Companies, and also the cost of erecting telegraph lines, stations and other facilities and appurtenances of the same general character and to take the place of those now used in connection with the present railway line, all of the said work to be performed under authority to be conferred by the Columbia and Port Deposit Railway Company and the said construction payments to be made monthly by the Power Company on demand of the Columbia and Port Deposit Railway Company.

**Fifth:**—The Railway Companies hereby agree that during the construction of the said relocated roadbed, tracks and appurtenances such work of construction shall not be subjected to unnecessary delay, and the Power Company hereby agrees to pay to the Railway Companies, as part compensation for the loss of revenue and for the cost of moving their traffic by another route, the sum of \$300. per day, for each day that the railway may be closed while the line between Safe Harbor and a point 500 feet south of Benton Station is being constructed; and if the Conowingo dam be placed under construction, the Power Company hereby agrees to pay to the Railway Companies the actual cost, resulting from the loss of local traffic and the cost of moving through traffic by another route, during the time that the railway may be



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closed to permit the construction of the said relocated roadbed and track between a point 850 feet south of Fishing Creek and Rock Run, such cost to be certified by the Railway Companies.

The Power Company shall not be compelled to make any payment to the Railway Companies for the loss or diversion of traffic in connection with the work of reducing the said 0.5% grade between a point 850 feet south of Fishing Creek Station and a point 500 feet south of Benton Station to a 0.3% grade between a point 850 feet south of Fishing Creek Station and a point 350 feet south of Peach Bottom Station, as provided in Article Third hereof, unless such reduction of grade, in the opinion of the Railway Companies, requires the closing of their railway or the diversion of the traffic therefrom, but in such event the Power Company hereby agrees to pay to the Railway Companies the actual cost resulting from the loss of local traffic and the cost of moving through traffic by another route.

**Sixth:**—The Railway Companies hereby agree to facilitate the construction of the said relocated roadbed, track and appurtenances between Safe Harbor and Rock Run and will permit the use of the present tracks of the Railway Companies extending along the parts of the line to be relocated, and when the said relocated roadbed, track and appurtenances shall have been constructed and accepted by the Railway Companies, the material in the old line will be disposed of, and the amount received therefrom shall be deducted from the payments to be made by the Power Company, except the amount received from the disposition of the material in that part of the line between Safe Harbor and Shenk's Ferry, which shall be retained by the Railway Companies.

**Seventh:**—The Railway Companies hereby agree that when they shall make use of the grading of said relocated roadbed, built under the terms of this agreement, for laying a second track thereon, they will pay to the

Power Company for the grading, masonry and right of way for such second track between Safe Harbor and a point 500 feet south of Benton Station the sum of \$200,000.; and for that part thereof between a point 850 feet south of Fishing Creek Station and Rock Run the sum of \$175,000. and if the latter section is not constructed as hereinbefore provided they will pay to the Power Company for that portion between a point 850 feet south of Fishing Creek Station and a point 350 feet south of Peach Bottom Station, when the grade thereof has been reduced to 0.3%, the sum of \$47,144.

**Eighth:**—The Power Company hereby agrees to pay said Railway Companies all damages which may be sustained by them and to indemnify, protect and save harmless the Railway Companies from all claims, costs, charges, suits, demands or actions arising out of, or in connection with, or resulting from, the construction, existence or operation of the said dams, or from the closing, (if such be necessary,) and reconstruction of the said portions of the line of the Columbia and Port Deposit Railway Company.

The Power Company hereby further agrees that contemporaneously with the execution of this agreement it will execute and deliver unto the Railway Companies a bond in the sum of \$250,000. with sureties satisfactory to them, conditioned for the full and faithful performance by the Power Company, and its successors, of each and every its several covenants and agreements herein contained for and during the period of construction of its said dams, and for and during the reconstruction of the said portions of the line of railway and appurtenances of the said Railway Companies and until such portions are satisfactorily completed and placed in operation.

When the said portions of the line and appurtenances of the Railway Companies upon the new location shall have been constructed in conformity with the terms of this agreement and the same have been duly accepted by them and placed in operation, and the Power Com-

pany shall have made the payments required by this agreement, then and thereupon said bond shall become void, it being, however, distinctly understood that the giving and acceptance of the said bond shall not be construed as in any way limiting the measure of the liability and obligation under this agreement of the Power Company, and its successors, but shall be treated and considered as further and additional security, for the protection of the Railway Companies.

If, at any time, the sureties upon the bond shall be deemed insufficient by the Railway Companies, the Power Company hereby agrees to forthwith furnish other sureties satisfactory to the Railway Companies.

**Ninth:**—The Railway Companies and the Power Company hereby agree that in consideration of the covenants in this agreement contained (and to enable the Railway Companies to co-operate with it in the prompt delivery of materials, and the prompt construction of, the said relocated roadbed, track and appurtenances) they will, in so far as they may legally and properly be able to do so, ship or cause to be shipped, all materials ordered for the said roadbed, track and appurtenances, and the dams hereinbefore mentioned, by the lines in the Pennsylvania Railroad System and over and by the lines of railroad owned, operated or controlled by the Railway Companies.

**Tenth:**—The Railway Companies hereby agree that if the Power Company does not desire to construct the said Conowingo dam, it may, not later than June 30th, 1912, assign to another corporation, all of its rights, privileges, covenants and obligations in this agreement in so far as they relate to the said dam, but such assignment shall not be made until the form thereof, and the Company to whom the assignment is to be made, are approved by, and declared to be entirely satisfactory to, the Railway Companies, and only when such Assignee Company shall assume and agree to perform all the obligations of the Power Company under this agreement.